

ABSTRACT OF THE DISCLOSURE

A fluidized bed reactor (10) for chemically transforming reactants to generate a desired product, having a hollow, elongated, vertically oriented reactor housing (12) for confining the reaction and an unobstructed collection path (18) below the reaction zone for funneling the residue of the process to an exit port (32). A central gas inlet (22) proximate the bottom of the reaction zone within the housing directs gas parallel to the vertical axis of the housing to maintain the raw materials in suspension. A plurality of individually controlled peripheral gas jets (24) positioned at least two elevations along the elongated dimension of the reaction housing (12), and located circumferentially around the housing (12) at each elevation, introduce gas at an angle to promote mixing of the entrained materials in suspension. The clog-free collection path (18) below the reaction zone funnels the residue of the process to an exit port (32) where it is continuously removed by a screw feeder (34). A gas sparger (30) below the reaction zone diverts fine agglomerates of the residue back into the reaction stream to increase the efficiency of the process and minimize the residue.

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